

PATENT SPECIFICATION

819,206

DRAWINGS ATTACHED.



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COMPLETE SPECIFICATION.

Improvements in or relating to Boxes made of Cardboard or like Material.

We, DONALD RICHARD PATRICK JACKSON, a British Subject, and MOLINS MACHINE COMPANY LIMITED, a British Company, both of 2 Evelyn Street, Deptford, London, S.E.8, England, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

- 10 This invention concerns improvements in or relating to boxes made of cardboard or like material, and in particular concerns a box which has a body portion, a box-like lid hingedly connected to the back wall of the body portion, and a part extending upwardly from the body portion so as to lie within the box-like lid when the box is closed. Such a box will for convenience be referred to herein as "a box as specified". Examples of boxes as specified are disclosed in British Patent Specification No. 507,998 where for example in Figures 3 and 7 of the drawings accompanying the Specification the box shown in Figure 3 comprises the inner member shown in Figure 7. Parts of the inner member in that arrangement, extend upwardly from inside the body of the box so as to lie within the lid of the box when the latter is closed. One function of such
- 20 upwardly-extending parts is to provide corner portions which engage the inside of the lid during closing of the box.

- 35 According to the invention there is provided a box as specified, wherein the part extending upwardly from the body portion so as to lie within the lid, when the box is closed, comprises side panels connected to and extending upwardly from the side walls of said body portion and inset from said side

walls by distortion or deformation of the material, and a front panel extending upwardly from the front wall of the said body portion, and wherein corner portions at the junctions of said front panel with said side panels extend outwardly from the planes of the inset panels to form ribs which are substantially in line with the corresponding corner portions at the junctions of the said front wall with the said side walls. The said front panel may be similarly inset from the front wall of the body portion.

The ribs formed at the corner portions extend upwardly into the inner corners of the lid when the box is closed, and thus tend to lock the lid in closed position, while parts at least of the edges of the side walls of the lid can at least partially abut the shoulders formed between the inset side panels and the side walls of the body portion. Where the said front panel is also inset, the front wall of the lid can also partly abut the shoulder formed between the inset front panel and the front wall.

A box according to the invention will now be described by way of example with reference to Figures 1 to 4 of the drawings accompanying the Provisional Specification, in which:—

Figure 1 is a perspective view of a box according to the invention;

Figure 2 is a plan of part of the box shown in Figure 1, but to a larger scale;

Figure 3 shows a part of a blank from which the box is made, looking at the side of the blank which forms the outer surface of the packet; and

Figure 4 shows a complete blank, looking at the inner side.

The box, which is made from a single

[Prt]

cardboard blank, shown in Figure 4, comprises a relatively deep body portion and a box-like lid hinged on the back wall of the body portion. The body portion comprises a back wall 1, a front wall 2, and side walls each consisting of an outer panel 3 and an inner panel 4. The lid comprises a back wall 5 connected to the wall 1, a top wall 6, a front wall 7, and side walls each consisting of an outer panel 8 and an inner panel 9. The front wall of the lid has an inner reinforcing panel 10. Flaps 11 extend from the panels 9 and lie against the inner surface of the top wall 6 when folded.

The body portion of the box comprises a front panel 12 formed in one piece with and extending upwardly from the front wall 2, and two side panels 13 each of which is formed in one piece with a panel 3 and extends upwardly from it.

The panels 12 and 13 are inset from the wall 2 and panels 3 respectively, by distortion or deformation of the cardboard so as to press the inset panels inwardly. The panel 12 is separated from the wall 2 by a shoulder 14 while the panels 13 are separated from the panels 3 by similar shoulders 15. These shoulders, created by the deformation of the material, provide surfaces against which the free edges of the front and side walls of the lid can to some extent abut when the box is closed, the inset panels 12 and 13 then lying wholly within the lid.

The inner panels 4 of the side walls of the body portion terminate in upper edges which, as can be seen from Figure 1, substantially coincide with the shoulders 15. It will be noted that the inset panels 13 are panels of single thickness, the side walls beyond which they extend are each formed from two layers, namely the panels 3 and 4.

Corner portions 16 at the junctions of the side panels 13 with the front panel 12 are arranged to extend outwardly from the planes of the inset parts of the panels, and are left substantially in line with the corresponding portions at the junctions of the wall 2 and panels 3.

Figure 2 shows the arrangement as seen in plan and it will be seen that the corner portions 16 from ribs or beads which are shown as approximately arcuate or semi-tubular in cross-section and, in effect, form continuations of the corners joining the walls 2 and 3.

Figure 3 shows a fragment of the single blank from which the box is made, showing the panels 12 and 13 and the front wall 2 and side panels 3. The panels 12 and 13 are inset by pressing the blank in a suitable die while the blank is in a flat condition as shown in Figure 3.

For the sake of clearness, the size of the ribs 16 and shoulders 14 and 15 are some-

what exaggerated in Figures 1 and 3. Also it will be understood that the ribs 16 will, in an actual box, not necessarily have the rounded, semi-tubular appearance shown in Figures 1 and 2; nor would they necessarily have the same cross-sectional size throughout the whole of their length in the manner shown in Figures 1 and 3. The cross-sectional shape and size of the ribs 16 will to some extent depend on the nature and quality of the board from which the blank is made.

The panel 12 is cut away at its mid-portion, as shown in Figures 1, 3 and 4, to facilitate access to the contents of the box.

In the construction of the lid, the inner side panels 9 and the reinforcing panel 10 are so dimensioned and arranged as to co-operate with the ribs 16 and with the cut-away panel 12 when the box is closed. Thus, the panel 10 fits partially within the recess in the panel 12, or in other words, the up-standing parts 17 of the panel 12 on either side of the recess lie against the front wall 7 of the closed lid, on either side of the reinforcing panel 10. Further, the inner side lid panels 9 terminate short of the corners of the lid, leaving shallow recesses adjacent the corners into which the ribs 16 can fit when the box is closed.

Figure 4 shows a complete blank from which the box is made, looking at the inner side of the blank—that is, the side which will be the inner side of the box. In addition to the parts which are shown in Figure 1, Figure 4 also shows a bottom body panel 18 (not visible in the other Figures) and flaps 19 extending from the panels 4. These flaps are folded so as to lie on the bottom panel 18 when the box is made, and are similar in this respect to the flaps 11. The manner in which the blank is folded will be clear from Figure 1.

The corners 20 of the panels 13 are bent slightly inwardly so as to provide a lead for the side walls of the lid when the lid is swung into closed position.

It will be seen from the above description that the inset panels 12 and 13, with the ribbed corner portions 16, correspond in effect to the "inner member" referred to above in connection with British Patent Specification No. 507,998. The present construction, however, has the advantage that the box can be made from a single blank, and with considerably less material than would be required if a separate "inner member" were provided as in the earlier construction.

However, the ribs 16 at the corner portions add considerably to the strength and rigidity of the upper part of the body portion of the box—that is, the part which extends upwardly inside the lid when the box is closed. This added rigidity increases the

effectiveness of this part of the box in holding the lid shut.

The amount by which the panels 12 and 13 are inset is preferably equal to about two thicknesses of the material.

Thus the parts of the side walls of the lid which are close to the back of the box can be arranged so as to fit snugly over the recessed panels 13, with their edges abutting the shoulders 15. In the region of the corner portions, the side walls of the lid are forced by the ribs 16 slightly away from the panels 13, but owing to the arrangement described whereby the inner side lid panels 9 do not extend right into the inner corners of the lid, it will be seen that the ribs 16 engage only the outer side lid panels 8, and thus the side walls of the lid near the corner portions are pushed outwardly by the ribs by an amount equal to approximately only a single thickness of board. Thus even in the region of the corner portions the edges of the side walls of the lid can partly abut the shoulders 15, although the side walls will not, at this region, be completely flush with the side walls 3.

In the case of the front wall of the lid, the ribs 16 engage a single thickness of the front wall 7, while the greater part of the free edge of the front wall is of double thickness owing to the presence of the reinforcing flap 10. Thus, although the ribs 16 hold the front wall of the lid away from the panel 12 to some extent, the part of the edge of this wall which is of double thickness can partly abut the shoulder 14. The small amount by which the edge of the front wall of the lid stands away from the surface of the front wall 2 of the body portion does not detract from the appearance of the box, and in fact the slight projection of the edge from the plane of the front wall 2 makes it easier to engage the edge of the lid by means of a finger or thumb in order to push the lid back. This projection of the edge of the lid can be increased, if desired, by thickening part of the edge.

In an alternative construction, which it does not appear necessary to illustrate in the drawings, the front panel 12 is not inset but is left in the same plane as the front wall 2. In that case the ribs 16 will project sideways only.

In any of the constructions described above the reinforcing panel 10 may be omitted.

WHAT WE CLAIM IS:—

1. A box as specified wherein the part extending upwardly from the body portion

so as to lie within the lid, when the box is closed, comprises side panels connected to and extending upwardly from the side walls of said body portion and inset from said side walls by distortion or deformation of the material, and a front panel extending upwardly from the front wall of the said body portion, and wherein corner portions at the junctions of said front panel with said side panels extend outwardly from the planes of the inset panels to form ribs which are substantially in line with the corresponding corner portions at the junctions of the said front wall with the said side walls.

2. A box as claimed in Claim 1, wherein the said front panel is similarly inset from the front wall of the body portion.

3. A box as claimed in Claim 1 or Claim 2, wherein the ribs formed at the corner portions extend upwardly into the inner corners of the lid when the box is closed, and thus tend to lock the lid in position.

4. A box as claimed in any of the preceding claims, wherein parts at least of the edges of the side walls of the lid are arranged at least partially to abut the shoulders formed between the inset side panels and the side walls of the body portion.

5. A box as claimed in Claim 2 or in Claim 3 or 4 in combination with Claim 2, wherein the front wall of the lid is arranged at least partially to abut the shoulder formed between the inset front panel and the front wall.

6. A box as claimed in any of the preceding claims, wherein the said side panels which are inset from the side walls of the body portion of the box are formed of a single thickness of material, while the said side walls are each formed of an inner and outer layer of material, the inner layers terminating in edges substantially coinciding with the shoulders formed between the inset side panels and the said side walls.

7. A box as specified, substantially as described with reference to Figures 1, 2, 3 and 4 of the drawings accompanying the Provisional Specification.

8. A blank for a box, substantially as described with reference to Figure 4 of the drawings accompanying the Provisional Specification.

FREDERICK W. HACKING,

Chartered Patent Agent,

2 Evelyn Street, Deptford, London, S.E.8.

Agent for the Applicants.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Boxes made of Cardboard or like Material.

We, DONALD RICHARD PATRICK JACKSON, a British Subject, and MOLINS MACHINE COMPANY LIMITED, a British Company, both of 2 Evelyn Street, Deptford, London, S.E.8, England, do hereby declare this invention to be described in the following statement:—

This invention concerns improvements in or relating to boxes made of cardboard or like material, and in particular concerns a box which has a body portion, a box-like lid hingedly connected to the back wall of the body portion, and a part extending upwardly from the body portion so as to lie within the box-like lid when the box is closed. Such a box will for convenience be referred to herein as "a box as specified". Examples of boxes as specified are disclosed in British Patent Specification No. 507,998, where for example in Figures 3 and 7 of the drawings accompanying the Complete Specification the box shown in Figure 3 comprises the inner member shown in Figure 7. Parts of the inner member, in that arrangement, extend upwardly from inside the body of the box so as to lie within the lid of the box when the latter is closed. One function of such upwardly extending parts is to provide corner portions which engage the inside of the lid during closing of the box.

According to the invention there is provided a box as specified, wherein the part extending upwardly from the body portion so as to lie within the lid, when the box is closed, comprises side panels connected to and extending upwardly from the side walls of said body portion and inset from said side walls by distortion or deformation of the material, and a front panel extending upwardly from the front wall of the said body portion, and wherein corner portions at the junctions of said front panel with said side panels extend outwardly from the planes of the inset panels to form ribs which are substantially in line with the corresponding corner portions at the junctions of the said front wall with the said side walls. The said front panel may be similarly inset from the front wall of the body portion.

The ribs formed at the corner portions extend upwardly into the inner corners of the lid when the box is closed, and thus tend to lock the lid in closed position, while parts at least of the edges of the side walls of the lid can at least partially abut the shoulders formed between the inset side panels and the side walls of the body portion. Where the said front panel is also inset, the

front wall of the lid can also to some extent abut the shoulder formed between the inset front panel and the front wall.

Where the side walls of the lid consist of double thicknesses of material, the inner layers may be arranged to terminate short of the inner corners of the lid so as to leave shallow recesses in which the ribs formed at said corner portions can fit when the box is closed.

A box according to the invention will now be described by way of example with reference to the accompanying drawing, in which:—

Figure 1 is a perspective view of a box according to the invention;

Figure 2 is a plan of part of the box shown in Figure 1;

Figure 3 shows a part of a blank from which the box is made, looking at the side of the blank which forms the outer surface of the packet;

Figure 4 shows a complete blank, looking at the inner side; and

Figure 5 is a view similar to Figure 2 but illustrating an alternative construction.

The box, which is made from a single cardboard blank, comprises a relatively deep body portion and a box-like lid hinged on the back wall of the body portion. The body portion comprises a back wall 1, a front wall 2, and side walls each consisting of an outer panel 3 and an inner panel 4. The lid comprises a back wall 5 connected to the wall 1, a top wall 6, a front wall 7, and side walls each consisting of an outer panel 8 and an inner panel 9. The front wall of the lid has an inner reinforcing panel 10. Flaps 11 extend from the panels 9 and lie against the inner surface of the top wall 6 when folded.

The body portion of the box comprises a front panel 12 formed in one piece with and extending upwardly from the front wall 2, and two side panels 13 each of which is formed in one piece with a panel 3 and extends upwardly from it.

The panels 12 and 13 are inset from the wall 2 and panels 3 respectively, by distortion or deformation of the cardboard so as to press the inset panels inwardly. The panel 12 is separated from the wall 2 by a shoulder 14 while the panels 13 are separated from the panels 3 by similar shoulders 15. These shoulders, created by the deformation of the material, provide surfaces against which the free edges of the

front and side walls of the lid can to some extent abut when the box is closed, the inset panels 12 and 13 then lying wholly within the lid.

- 5 Corner portions 16 at the junctions of the side panels 13 with the front panel 12 are arranged to extend outwardly from the planes of the inset parts of the panels, and are left substantially in line with the corresponding portions at the junctions of the wall 2 and panels 3.

- 10 Figure 2 shows the arrangement as seen in plan and it will be seen that the corner portions 16 form ribs or beads which are approximately arcuate or semi-tubular in cross-section and, in effect, form continuations of the corners joining the walls 2 and 3.

- 20 Figure 3 shows a fragment of the single blank from which the box is made, showing the panels 12 and 13 and the front wall 2 and side panels 3. The panels 12 and 13 are inset by pressing the blank in a suitable die while the blank is in a flat condition as shown in Figure 3.

- 25 The panel 12 is cut away at its mid-portion, as shown in Figures 1, 3 and 4, to facilitate access to the contents of the box.

- 30 In the construction of the lid, the inner side panels 9 and the reinforcing panel 10 are so dimensioned and arranged as to co-operate with the ribs 16 and with the cut-away panel 12 when the box is closed. Thus, the panel 10 fits partially within the recess in the panel 12, or in other words, the upstanding parts 17 of the panel 12 on either side of the recess lie against the front wall 7 of the closed lid, on either side of the reinforcing panel 10. Further, the inner side lid panels 9 terminate short of the corners of the lid, leaving shallow recesses adjacent the corners into which the ribs 16 can fit when the box is closed.

- 45 Figure 4 shows a complete blank from which the box is made, looking at the inner side of the blank—that is, the side which will be the inner side of the box. As shown in Figure 4, the blank comprises a bottom body panel 18 (not visible in the other 50 Figures) and flaps 19 extending from the panels 4. These flaps are folded so as to lie on the bottom panel 18 when the box is made, and are similar in this respect to the flaps 11. The manner in which the blank is folded will be clear from Figure 1.

- 55 The corners 20 of the panels 13 are bent slightly inwardly so as to provide a lead for the side walls of the lid when the lid is swung into closed position.

- 60 It will be seen from the above description that the inset panels 12 and 13, with the ribbed corner portions 16, correspond in effect to the "inner member" referred to above in connection with British Patent Specification No. 507,998. The present con-

struction, however, has the advantage that the box can be made from a single blank, and with considerably less material than would be required if a separate "inner member" were provided as in the earlier construction. 70

Moreover, the ribs 16 at the corner portions add considerably to the strength and rigidity of the upper part of the body portion of the box—that is, the part which extends upwardly inside the lid when the box is closed. This added rigidity increases the effectiveness of this part of the box in holding the lid shut. 75

The amount by which the panels 12 and 13 are inset is preferably equal to about two thicknesses of the material. 80

Thus the parts of the side walls of the lid which are close to the back of the box can be arranged so as to fit snugly over the recessed panels 13, with their edges abutting the shoulders 15. In the region of the corner portions, the side walls of the lid are forced by the ribs 16 slightly away from the panels 13, but owing to the arrangement described whereby the inner side lid panels 9 do not extend right into the inner corners of the lid, it will be seen that the ribs 16 engage only the outer side lid panels 8, and thus the side walls of the lid near the corner portions are pushed outwardly by the ribs by an amount equal to approximately only a single thickness of board. Thus even in the region of the corner portions the edges of the side walls of the lid can partly abut the shoulders 15, although the side walls will not, at this region, be completely flush with the side walls 3. 85 90 95 100

In the case of the front wall of the lid, the ribs 16 engage a single thickness of the front wall 7, while the greater part of the free edge of the front wall is of double thickness owing to the presence of the reinforcing flap 10. Thus, although the ribs 16 hold the front wall of the lid away from the panel 12 to some extent, the part of the edge of this wall which is of double thickness can partly abut the shoulder 14. The small amount by which the edge of the front wall of the lid stands away from the surface of the front wall 2 of the body portion does not detract from the appearance of the box, and in fact the slight projection of the edge from the plane of the front wall 2 makes it easier to engage the edge of the lid by means of a finger or thumb in order to push the lid back. This projection of the edge of the lid can be increased, if desired, by thickening part of the edge. 110 115 120

In an alternative construction, which it 125 does not appear necessary to illustrate in the drawings, the front panel 12 is not inset but is left in the same plane as the front wall 2. In that case the ribs 16 will project sideways only. 130

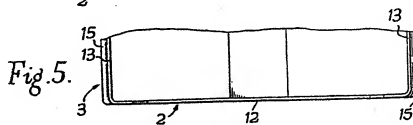
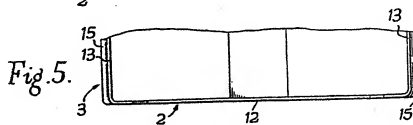
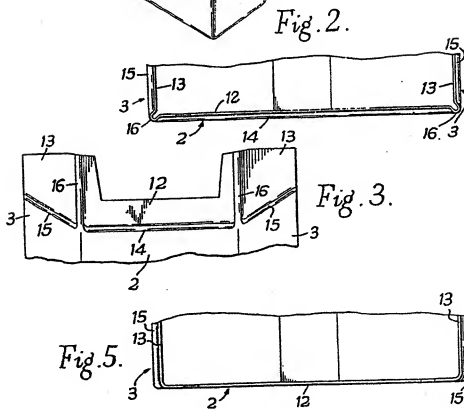
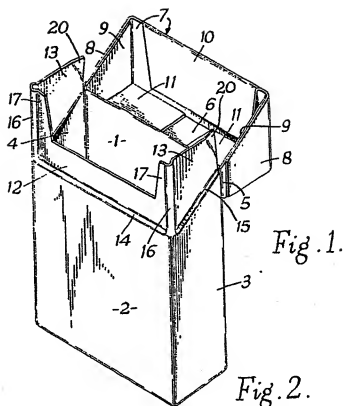
In another alternative construction, which is illustrated in Figure 5, ribs such as 16 (Figures 1, 2 and 3) are eliminated entirely, and the side panels 13 are recessed completely, while the front panel 12 remains in the same plane as the front wall 2 and merely forms a continuation of the wall 2. In this case shoulders 15 are formed only at the sides of the box, as shown in Figure 5. With this construction, the side lid panels 8 can be flush with the side body panels 3

when the box is closed, while the front wall 7 of the lid will of course extend beyond the plane of the front wall 2.

In any of the constructions described above, the reinforcing panel 10 may be omitted.

FREDERICK W. HACKING,
Chartered Patent Agent,
2 Evelyn Street, Deptford, London, S.E.8.
Agent for the Applicants.

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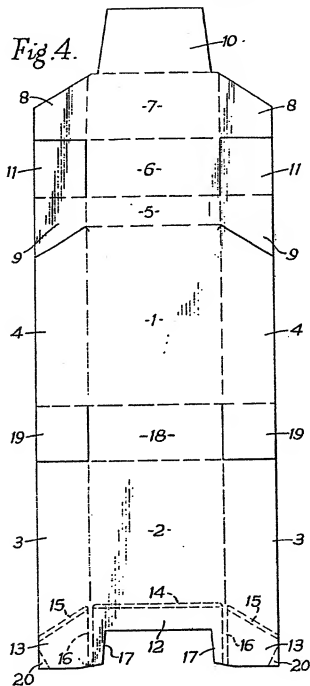
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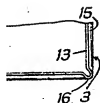
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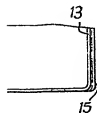
Fig. 4.



1.



3.



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2 SHEETS The drawing is a reproduction of
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SHEETS 1 & 2

